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ABSTRACT

This report presents evaluative information on the 1973-74 John Burroughs Montessori Pre-School Program, a project which successfully adapts the Montessori method to the public school setting. Specifically, the report describes: (1) the program in terms of its objectives and philosophy; (2) the characteristics of participants in the program; (3) the range of data used in the evaluation, presentation, and analysis; (4) plans for the program during the 1974-75 school year, including recommended changes in the program and its evaluation which will enhance the overall effectiveness of the program. (CS)

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# *FINAL EVALUATION REPORT*

# *OF THE*

# *MONTESSORI PRE-SCHOOL PROGRAM*

*SUBMITTED TO:*

*ASSISTANT SUPERINTENDENT*
*DIVISION OF PLANNING, INNOVATION & RESEARCH*
*DISTRICT OF COLUMBIA PUBLIC SCHOOLS*
*WASHINGTON, D. C.*

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PS 007 700

*OCTOBER 20, 1974*

## INTRODUCTION

This Final Evaluation Report presents evaluative information on the John Burroughs Montessori Pre-School Program for the 1973-74 school year. The first part of the report describes the Program in terms of its objectives and philosophy. Secondly, the report describes the characteristics of participants in the Program.

The next major section of the report, and the area of primary interest, is a description of the range of data used in the evaluation, presentation and analysis of same.

The third and final part of the report describes plans for the Program during the 1974-75 school year. It also describes recommended changes in the Program and its evaluation which we feel will enhance the overall effectiveness of the Program. The Final Evaluation Report differs from the Interim Report primarily in terms of the amount of evaluative data provided.

*OBJECTIVES OF THE*
*MONTESSORI PRE-SCHOOL PROJECT*

*The primary objectives of the Montessori Pre-School Project are briefly outlined below:*

A. *One major objective which has been a part of this Project from its inception is that of adapting the Montessori Method, as one of the methods that has proved successful in early childhood education, to the public school setting in the District of Columbia. This objective also involves teacher training, internship in the Montessori Method and the opportunity for student evaluation.*

B. *To provide for the optimal growth of each child in areas such as readiness level, reading, arithmetic, sensorial development and other areas stressed by the Montessori Method.*

C. *To develop concentration skills, self initiated learning, intrinsic motivation and a positive self-concept.*

*Some of the specific objectives growing out of classroom instruction are as follows:*

1. *To recognize objects and pictures that are the same and those that are different.*

2. *To identify familiar sounds and respond to sounds or oral instruction.*

3. *To name familiar objects or actions and use descriptive words.*

4. *To describe physical and abstract characteristics of an object or picture of an object.*

5. *To classify objects by one or more characteristics.*

6. *To seek information to solve problems, plan strategy for games or problems, attack a problem rationally or systematically, and anticipate future events in a series based upon past events.*

7. *To identify or describe an object by touch.*

8. *To identify and name the basic shapes.*

9. *To identify and name colors.*

10. To speak so that he can be understood and can answer simple questions in sentences using various parts of speech.

11. To count from 1 to 10.

12. To make and follow rules.

13. To compare tastes and smells of common items.

14. To control hand and finger movements, coordinate eyes and hands in a manipulating task.

15. To demonstrate friendliness and respect for others and willingness to participate in relating to other children.

16. To describe how people differ in terms of physical features, roles in a family, places where they live, and occupations.

17. To demonstrate good health and safety practices in playing, eating and in moving indoors and outdoors.

## DESCRIPTION OF PROGRAM

The Montessori Pre-School Program at the John Burroughs Elementary School is a third-year experimental program designed to adapt the Montessori instructional method to the public school setting in the District of Columbia. The program is funded under Title III of the Elementary and Secondary Education Act.

The third year effort follows closely the program's principles and format used during the first and second years of the Project. The Montessori Pre-School Educational Program offers a singular opportunity to encourage the fullest development of each individual child. The approach is grounded on the principle of freedom, experimentation and spontaneity while providing a structured learning environment. Experimentation by the child is encouraged since it postulates a result in greater learning, self-confidence and the development of positive attitudes toward the learning situation.

The Montessori approach is based on the belief that the environment in the early childhood years can stimulate or drastically limit the individual's intellectual potential. The method calls for exposure to and manipulation of a great variety of intellectual and

sensory stimuli designed to take the child step by step through the concepts to be learned.

Another major aspect of the Method is minimal guidance from the teacher. Most of the learning is what Dr. Montessori called "auto-education." Attractive materials at the child's level of readiness, and the child's voluntary spontaneous choice of activities, without teacher interruption, allow the development of concentration and other intellectual skills. The Montessori methodology incorporates, within a framework of freedom, activities and exercises designed to culminate in "inner discipline" and encourage intellectual competence.

The current experimental Project under evaluation is located at the John Burroughs Elementary School in Northeast Washington. It provides for two classes and a total of thirty-four children. One pre-school class is staffed by one teacher and one aide, and a first grade class by one teacher.

Parents are an integral part of the Program. Hence, an orientation session was planned and implemented for the parents. The orientation session was designed to develop channels to sustain the active participation of parents in the educational program through volunteer services and continuity of the educational program at home.

During the 1973-74 school year the pupil participants consisted of the following:

A. One Pre-School Class staffed by one teacher and one aide.

B. One K-1 Class staffed by one teacher.

## PROGRAM IMPLEMENTATION

The teachers for the Program and pupils were readily available at the beginning of the school year. Facilities and instructional supplies and equipment were also available at the start of the school year.

In conjunction with the above, the instructional curricula planned for the Program were developed and ready for the start of the school year. The major areas listed below were given highest priority:

A. Phonetic Development

B. Beginning Number Concepts

C. Sensorial Development (Relation of size, shape, color, sound, etc.)

D. Motor Coordination

The Program Director, Mrs. Doris Hundley, was available throughout the year to provide excellent administrative direction to the Program. The overall implementation and operational level of the Program is estimated at a 90-100% level by this Evaluator.

## EVALUATION OF THE MONTESSORI PRE-SCHOOL PROJECT

The evaluation of the Montessori Pre-School Project consists of three major types. The first mode of evaluation consists of the continuous appraisal of each pupil's behavior by the teacher. The second mode of evaluation of pupil outcomes involves the use of standardized tests which appraise the development of the child's mental abilities as well as the child's attitudinal and motivational changes. The third mode of evaluation involves data obtained from parents and from observation by the Evaluator.

The ideal format for the evaluation task consists of: (1) collecting beginning-of-year data on pertinent variables; (2) following the implementation and operation of the Montessori Pre-School Project; (3) taking periodic measures on intellectual and attitudinal variables; and, (4) collecting end-of-year data on same variables. This sequence together with the provisions for adequate control would enable us to determine the effectiveness of the Project in meeting its objectives.

The primary focus of this Final Report is upon four major sets of data which relate directly to the objectives of the Project. These are:

1. Pre-School Inventory
2. Metropolitan Readiness Test
3. Engel's Self-Concept Scale
4. Communications From Parents

## DESCRIPTION OF THE PRE-SCHOOL INVENTORY

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The Pre-School Inventory was administered to a sample of thirty-two children. The Pre-School Inventory is a brief assessment and screening procedure designed for individual use with children in the age range of three to six years. It was developed to give a measure of achievement in areas regarded as necessary for success in school.

The Inventory is not culture-free. In fact, one aim in its development was to provide educators with an instrument that would permit them to highlight the degree of disadvantage which a child from a deprived background has at the time of entering school so that any observed defects might be reduced or eliminated. The test is designed to measure the child's performance in the following areas: basic information and vocabulary; number concepts and coordination; concepts of size, shape, motion, and color; concepts of time, object class, social functions and visual motor performance; following instructions; and independence and self-help.

The analysis of the scores made by pupils on the Pre-School Inventory in terms of the number of years a child had been in school follows:

A. One-Year Group: N = 18

B. Two-Year Group: N = 9

C. Three-Year Group: N = 5

The outcomes of these three groups are shown below in Table I:

TABLE I

PRE-SCHOOL INVENTORY SCORES OF THREE PRE-SCHOOL GROUPS

| GROUP | MEAN | STANDARD DEVIATION | NATIONAL PERCENTILE RANK |
|---|---|---|---|
| Three Years In Pre-School (5 to 6 years) | 59.20 | 2.63 | 95th |
| Two Years in Pre-School (4 to 4 yrs. 11 mos.) | 56.67 | 2.79 | 99th |
| One Year in Pre-School (3 to 3 yrs. 11 mos.) | 42.55 | 7.00 | 88th-97th |

These results show a considerably high level of performance of these pupils when measured against national norms. The same general

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level of performance is maintained by each age group, i.e., each age group is at the top of his or her peer group across the country.

This test, as was previously mentioned, represents the deprivation level on the one hand and the readiness level on the other hand of the pupils. It is obvious from the above results that one or more systematic variables are operating to produce the optimum results observed in this Program. We strongly urge that a control group of Kindergarten-First Grade children be tested at the same time as the Montessori K-1 children in order to help us determine more precisely if the observed results from this test are due primarily to the Montessori Approach.

## DESCRIPTION OF THE METROPOLITAN READINESS TEST

The Metropolitan Readiness Test is designed to measure the extent to which school beginners have developed in the several skills and abilities that contribute to readiness for first grade instruction. Among the factors that contribute to readiness for beginning school work are linguistic attainments and aptitudes, visual and auditory perception, muscular coordination, motor skills, number knowledge, and the ability to follow directions and pay attention in group work. Six tests are included in the Metropolitan Readiness Test: (1) Word Meaning; (2) Listening; (3) Matching; (4) Alphabet; (5) Numbers; and, (6) Copying.

They are, as defined:

Test 1: Word Meaning - A 16-item picture vocabulary test. The pupil selects from three pictures the one that illustrates the word the examiner names.

Test 2: Listening - A 16-item test of ability to comprehend phrases and sentences instead of individual words. The pupil selects from three pictures the one which portrays a situation or event the examiner describes briefly.

Test 3: Matching - A 14-item test of visual perception involving the recognition of similarities. The pupil makes one of three pictures which matches a given picture.

Test 4: Alphabet - A 16-item test of ability to recognize lower-case letters of the alphabet. The pupil chooses a letter named from among four alternatives.

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Test 5: Numbers - A 26-item test of number knowledge.

Test 6: Copying - A 14-item test which measures a combination of visual perception and motor control.

The results of the Metropolitan Readiness Test are discussed for all of the pupils who took the test and then a breakdown is presented for six-year olds and five-year olds. Table II shows the results of the Metropolitan Readiness Test for all pupils.

TABLE II

RESULTS OF THE METROPOLITAN READINESS TEST FOR KINDERGARTEN-FIRST GRADE PUPILS

| SUB-TEST | MEAN | PERCENTILE RANK |
|---|---|---|
| Word Meaning | 10.42 | Above National Mean |
| Listening | 9.95 | Above National Mean |
| Matching | 10.00 | Above National Mean |
| Alphabet | 15.21 | Above National Mean |
| Numbers | 15.58 | Above National Mean |
| Copying | 10.57 | Above National Mean |
| TOTAL SCORE | 71.73 HIGH NORMAL | 84 |

N = 19

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TABLE III

RESULTS OF THE METROPOLITAN READINESS TEST
FOR THE OLDEST KINDERGARTEN-FIRST GRADE PUPILS

| SUB-TEST | MEAN | PERCENTILE RANK |
|---|---|---|
| Word Meaning | 11.67 | Above National Mean |
| Listening | 12.33 | Above National Mean |
| Matching | 11.50 | Above National Mean |
| Alphabet | 16.00 | Above National Mean |
| Numbers | 15.67 | Above National Mean |
| Copying | 10.00 | Above National Mean |
| TOTAL SCORE | 77.17 | 92nd PERCENTILE |

N = 6

TABLE IV

RESULTS OF THE METROPOLITAN READINESS TEST
FOR THE MIDDLE KINDERGARTEN-FIRST GRADE PUPILS

| SUB-TEST | MEAN | PERCENTILE RANK |
|---|---|---|
| Word Meaning | 10.33 | Above National Mean |
| Listening | 9.33 | Above National Mean |
| Matching | 9.22 | Above National Mean |
| Alphabet | 14.56 | Above National Mean |
| Numbers | 15.67 | Above National Mean |
| Copying | 10.67 | Above National Mean |
| TOTAL SCORE | 69.78 | 81st PERCENTILE |

N = 9

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TABLE V

RESULTS OF THE METROPOLITAN READINESS TEST
FOR THE YOUNGEST KINDERGARTEN-FIRST GRADE PUPILS

| SUB-TEST | MEAN | PERCENTILE RANK |
|---|---|---|
| Word Meaning | 8.75 | Above National Mean |
| Listening | 7.50 | Below National Mean |
| Matching | 9.50 | Above National Mean |
| Alphabet | 15.50 | Above National Mean |
| Numbers | 15.25 | Above National Mean |
| Copying | 8.33 | Above National Mean |
| TOTAL SCORE | 64.83 | 71st PERCENTILE |

N = 4

The results of Tables II, III, IV and V depict a significant high readiness level of pupils in the Kindgergarten-First Grade Class for the first grade.

The oldest children in the group show a higher level of readiness while the youngest children show the lowest level of readiness. Those in-between show a readiness level which lies between the oldest and youngest groups.

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DESCRIPTION OF ENGEL'S SELF-CONCEPT SCALE
"WHERE ARE YOU"

The Engel's "Where Are You" Self Concept Scale, used in evaluating pupils' feelings about themselves, was administered to the Project children. The Scale is designed so as to solicit a child's response on a scale of a series of items, such as: smart, happy, handsome-pretty, etc.

Each child was asked to point to the position on a ladder where he would like to be for the following traits:

A. Smart-Stupid

B. Sad-Happy

C. Kids Don't Like Him-Like Him

D. Brave-Afraid

E. Handsome (M), Pretty (F) - Ugly

F. Strong-Weak

G. Follow the Rules-Does Not Follow the Rules

Nineteen (19) children were tested with the Engel's Test. The average age of those tested was 4.3 years. The youngest child was 2-1/2 years of age and the oldest child was 5-1/2 years of age.

Table VI below describes the results of this test.

TABLE VI

RESULTS OF ENGEL'S SELF-CONCEPT SCALE
FOR MONTESSORI PRE-SCHOOL PUPILS
(ALL AGES COMBINED)

| AREA | SCORE | HIGHEST POSSIBLE SCORE |
|---|---|---|
| Smart | 4.7 | 5 |
| Happy | 5.0 | 5 |
| Kids Like (Him, Her) | 4.6 | 5 |
| Brave | 3.2 | 5 |
| Handsome (Pretty) | 4.3 | 5 |
| Strong | 4.5 | 5 |
| Follows the Rules | 4.8 | 5 |
| HIGHEST POSSIBLE SCORE = 35.00 | | |
| MEAN OBTAINED SCORE = 31.10 | | |
| PERCENT OF POSSIBLE SCORE = 88.86 | | |

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TABLE VII

RESULTS OF ENGEL'S SELF-CONCEPT SCALE
FOR PUPILS FIVE YEARS AND OLDER

| | |
|---|---|
| Total Possible Score | 35.00 |
| Obtained Score Mean | 30.74 |
| Percent of Possible Score | 87.82% |

TABLE VIII

RESULTS OF ENGEL'S SELF-CONCEPT SCALE
FOR PUPILS FOUR TO FIVE YRS. OLD

| | |
|---|---|
| Total Possible Score | 35.00 |
| Obtained Score Mean | 30.00 |
| Percent of Possible Score | 85.71% |

TABLE IX

RESULTS OF ENGEL'S SELF-CONCEPT SCALE

FOR PUPILS 2-1/2 to 4 YEARS OLD

| | |
|---|---|
| Total Possible Score | 35.00 |
| Obtained Score Mean | 29.28 |
| Percent of Possible Score | 83.65% |

The results of the Engel's Self Concept Scale show that pupils in this Program have a high regard for themselves. The overall performance shows that the highest possible score was only 4.90 points higher than that obtained by the pupils or 88.86% of the total possible score.

The area with the lowest score was the Afraid-Brave dimension: 3.2 of a possible 5.0 score. The highest score was on the Happy-Sad dimension: 5.0 of a possible 5.00 score.

An analysis of the Engel's score by age level shows that in general there is a slight lowering of self-concept scores as the age decreases from five to about 2-1/2 years. Some of this may be due to errors of measurement, however, since the youngest children may not have clearly perceived all of the dimensions measured as well as the older children.

*PARENT PARTICIPATION IN THE*
*MONTESSORI PRE-SCHOOL PROGRAM*

*The interest and participation level of parents in the Montessori Program during the current year as in previous years have been observed to be high. We have provided below a running description of parental activities that reflect their attitudes and interest in the Program. The following description represents a report by the chairperson of the parent group covering the following areas:*

*A. Scheduled Workshops*

*B. Speakers' and Consultants' Work With Parents*

*C. Field Trips and Parties For Children*

*D. Use of Didactic Materials*

*E. Development of Language Materials*

*F. Contribution of Funds To Maintenance, Nutrition and Program Materials*

REPORT BY MRS. SANDY HASSAN
JUNE 5, 1974

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PARENT PARTICIPATION IN THE MONTESSORI PROGRAM AT
JOHN BURROUGHS ELEMENTARY SCHOOL

On Wednesday, May 8th, notices went out to parents announcing the last major trip of the school year and asking for chaperones. On Thursday, May 9th, the trip committee chairperson had responses from 25 parent volunteers to accompany the children- roughly one parent for every two and one half children. This kind of parent participation is the rule rather than the exception in the Montessori Program of John Burroughs Elementary School.

The parents' committee was first formed to familiarize the parents with the philosophy and methodology of Montessori. At the first workshop in September of 1971 and at the workshops beginning the following three school years, parents were shown films, given leaflets, records, and books to acquaint themselves with the life and work of Dr. Maria Montessori. The Montessori approach to early childhood education in a highly structured yet relaxed, multi-age, open classroom was to be the first of its kind in the public school system of the District. Parents were taught ways to extend the classroom techniques into the home and actually made some of the pedagogical materials to be used in the classroom.

With a commitment to make the Program the best possible, the parent organization formed functioning committees and held monthly meetings. The trip committee planned outings throughout the year and enlisted parents to accompany the children. The snack committee planned nutritional snacks for the children- nuts, fresh fruit, uncooked vegetables, yogurt, whole wheat breads, and cakes. The lunch committee coordinated parent volunteers to serve as attendants during the lunch hour and to plan games, movies and other activities after lunch. The educational committee with the aid of the Montessori teachers planned workshops for the year to discuss and plan for the expansion of the program to the primary and junior levels. When gates were needed to enclose the playground, the building and grounds committee had them installed. When the refrigerator ceased to function that committee had it repaired. The publicity and dissemination committee had leaflets printed descriptive of the Program and distributed them at a School Board Meeting, 3-A Council Meeting, and to other school and community organizations. That same committee contacted Channel 9 News to feature our program. The parent organization lobbied before the Board of Education to regularize the program. With that accomplished, there was cause for celebration.

The Montessori parents welcome their involvement with their school. They embrace the opportunity and the challenge to make the program work well. They voted to rotate the chairmanship every semester to maximize the number of parents involved.

Parents cite as the most remarkable aspect of the Montessori- which may be an exclusive feature of our program - that our children have developed a favorable disposition to the learning process. Our children are eager to learn, to do their work. So often we hear: "I had a good day in school today." "I did my work well." "My teacher says I'm such a big girl, I know my color tablets." These accomplishments may seem small, but what is immeasurable is the positive self-image that our children are developing. They feel and know: "I can do it, I am somebody."

The parent organization envisions the Montessori Program with its first graduates as a vanguard at Burroughs for the kind of reorganization that Superintendent Barbara Sizemore proposes for the school system as a whole - multi-age, multi-level, multi-modal and open classroom.

This Evaluation can attest to the enduring and significant efforts parents have made in the Montessori Program. It is the opinion of this Evaluator that the concerned attitude and high level of participation by parents are part responsible for the success of this Program as measured by the pupils' cognitive and affective outcomes.

## COOPERATION WITH OTHER EDUCATIONAL INSTITUTIONS

A primary effort of the Director of the Montessori Program has been to cooperate with other institutions in the growth, development, and assimilation of the Montessori Approach in the public schools. Hence, the Program fosters cooperation with the following institutions.

A. District of Columbia Teachers College

B. Washington Montessori Institute

C. Early Childhood Kindergarten and Nursery Education (EKNE) Directed by Mrs. Lena Gitter, Montessori Consultant

## DISSEMINATION OF PROGRAM INFORMATION

As in previous years, the Director has taken steps to disseminate information about the Program to other interested persons. Highlights

of dissemination activities for the 1973-74 school year include the following:

A. Television coverage of the Montessori Program by Eyewitness News, Channel 7

B. Slide show to parents and Ward 5 residents on the Montessori Program at John Burroughs

C. Letters to Parents

D. Inquiries from educators and others

E. Workshops for staff, parents and others


SUMMARY

The Montessori Method as utilized by the John Burroughs Elementary School closes a three year period of operation with considerable success from this Evaluator's point of view. Each year the Program has produced outcomes in the cognitive domain which indicate that participating pupils are in the top twenty-five percent on nationally standardized tests used.

These tests, such as the Metropolitan Readiness Test, the Pre-School Inventory and the Pre-School Language Scale, all point to a high level of readiness to do formal school work. The Evaluator recommends that these pupils be followed up throughout elementary school to determine if the background obtained during the early years carried them through elementary school.

The affective outcomes relating to pupil motivation and feelings of self-competence and worth has been measured and observed to be high in this Program by teachers, parents and the Evaluator.

Parental outcomes have reflected a high level of cooperation and help throughout the duration of the Program. Parents not only have been eager to help but of equal or more importance, they have been eager to learn. It is the professional opinion of the Evaluator that the positive pupils' outcomes were in part due to the parental outcomes.

The Director and Staff were able to implement the basics of the Program during the first year and improvements have been made as needed. The administration of the Program can best be described as creative, flexible and sufficient to meet the objectives of the Program. On the basis of all evaluation data gathered during the life of the Program, the Evaluator strongly recommends that the approach at John Burroughs be expanded as part of the regular school program to other public schools in the District of Columbia.